

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>FP2004-127WO</b>	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/JP2004/017276</b>	International filing date ( <i>day/month/year</i> ) <b>19.11.2004</b>	Priority date ( <i>day/month/year</i> ) <b>21.11.2003</b>	
International Patent Classification (IPC) or national classification and IPC <b>H05K3/32, H01M2/10</b>			
Applicant <b>ROHM CO., LTD.</b>			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <b>6</b> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input checked="" type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/JP2004/017276

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 

This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
 
  - international search (Rule 12.3 and 23.1(b))
  - publication of the international application (Rule 12.4)
  - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 

the international application as originally filed/furnished

the description:  
 pages \_\_\_\_\_ as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the claims:  
 nos. \_\_\_\_\_ as originally filed/furnished  
 nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the drawings:  
 sheets \_\_\_\_\_ as originally filed/furnished  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3.  The amendments have resulted in the cancellation of:
 

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/JP2004/017276

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	3, 5, 6	YES
	Claims	1, 2, 4, 7, 8	NO
Inventive step (IS)	Claims		YES
	Claims	1-8	NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

Document 1: JP 2002-50884 A (Rohm Co., Ltd.), 15 February 2002, paragraphs [0034] and [0039], and fig. 1 (Family: none)

Document 2: JP 2003-168407 A (Toshiba Corp.), 13 June 2003, paragraphs [0006] to [0009], [0012] and [0013], and fig. 2 (Family: none)

The invention set forth in claim 1 is disclosed in document 1 and document 2 cited in the international search report; therefore, the invention in question lacks novelty and does not involve an inventive step. Document 1 and document 2 both disclose circuit boards equipped with an insulative substrate, a conductive pad that is formed upon the aforementioned substrate, and a metal piece that is connected to the aforementioned pad via a solder layer, wherein said metal piece comprises a welding section for mounting a member to be welded; therein, a gap is formed between the aforementioned substrate and the aforementioned welding portion of the aforementioned metal piece so that the aforementioned welding portion and the aforementioned solder layer are separated by the aforementioned gap.

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**International application No.  
PCT/JP2004/017276**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

The inventions set forth in claims 2 and 4 are disclosed in document 1 cited in the international search report; therefore, the inventions in question lack novelty and do not involve an inventive step. Document 1 discloses a metal piece comprising two end sections and a center section that has a different height than said end sections, wherein a recess that constitutes one part of the gap is formed between the aforementioned two end sections.

The inventions set forth in claims 7 and 8 are disclosed in document 2 cited in the international search report; therefore, the inventions in question lack novelty and do not involve an inventive step. Document 2 discloses an invention wherein the pad and the solder layer are divided into a plurality of regions that are isolated from one another, and the spaces between the plurality of regions constitute a part of the gap.

The inventions set forth in claims 3 and 6 do not involve an inventive step in the light of document 1 cited in the international search report. The specific shape of the metal piece that forms the gap in the invention disclosed in document 1 is merely a simple design matter that can be configured in an appropriate manner by a person skilled in the art.

The invention set forth in claim 5 does not involve an inventive step in the light of document 1 cited in the international search report. Techniques for forming recesses in a metal piece by means of etching are well known in the prior art, and thus it would have been easy for a person skilled in the art to conceive of applying the abovementioned well-known technique in the invention disclosed in document 1 and forming the recesses in the

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

International application No.  
PCT/JP2004/017276

**Box No. V**      **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

metal pieces by means of etching.

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

International application No.

PCT/JP2004/017276

Box No. VI	Certain documents cited																				
1.	Certain published documents (Rule 70.10)																				
	<table><thead><tr><th>Application No. Patent No.</th><th>Publication date (day/month/year)</th><th>Filing date (day/month/year)</th><th>Priority date (valid claim) (day/month/year)</th></tr></thead><tbody><tr><td><b>JP 2004-348980 A</b></td><td><b>09.12.2004</b></td><td><b>19.05.2003</b></td><td></td></tr><tr><td colspan="4"><b>[E, X]</b></td></tr><tr><td><b>JP 2004-304019 A</b></td><td><b>28.10.2004</b></td><td><b>31.03.2003</b></td><td></td></tr><tr><td colspan="4"><b>[E, X]</b></td></tr></tbody></table>	Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)	<b>JP 2004-348980 A</b>	<b>09.12.2004</b>	<b>19.05.2003</b>		<b>[E, X]</b>				<b>JP 2004-304019 A</b>	<b>28.10.2004</b>	<b>31.03.2003</b>		<b>[E, X]</b>			
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2.	Non-written disclosures (Rule 70.9)																				
	<table><thead><tr><th>Kind of non-written disclosure</th><th>Date of non-written disclosure (day/month/year)</th><th>Date of written disclosure referring to non-written disclosure (day/month/year)</th></tr></thead><tbody><tr><td>_____</td><td>_____</td><td>_____</td></tr></tbody></table>	Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)	_____	_____	_____														
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